PATENT APPLICATION
Atty. Dkt. No.: 2206-001C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Morton M. MOWER

Appln. No.: **10/053,750**

Filed: Jan. 21, 2002 Group Art Unit: 3762

Conf. No.: 6121 Examiner:

For: AUGMENTATION OF ELECTRICAL CONDUCTION AND CONTRACTILITY BY BIPHASIC CARDIAC PACING ADMINISTERED VIA THE BLOOD POOL

REQUEST FOR INTERFERENCE UNDER 37 C.F.R. § 1.607(a)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Claims 10-57 are all the claims pending in the application. Applicant respectfully requests declaration of an interference in accordance with 37 C.F.R. § 1.607(a). The reasons for granting this request follow.

A. Identification of Patents

In accordance with 37 C.F.R. § 1.607(a)(1), Applicant identifies U.S. Patent No. 6,236,887 (hereinafter the '887 Patent), U.S. Patent No. 6,233,484 (hereinafter the '484 Patent), U.S. Patent No. 6,463,324 (hereinafter the '324 Patent), U.S. Patent No. 6,330,476 (hereinafter the '476 Patent), and U.S. Patent No. 6,317,631 (hereinafter the ' 631 Patent).

B. Proposed Count 1 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 1 directed to an apparatus for treatment of cardiac muscle:

COUNT 1

Apparatus for the combined drug/electric-stimulation treatment of a cardiac muscle, comprising:

means for creating an electric potential between at least two points located in the vicinity of the cardiac muscle;

means for causing a non-excitatory DC electric current signal to flow between said at least two points;

means for controlling the start time, duration and magnitude of the electric current signal flowing between said at least two points; and

means for superimposing on the electric current signal one or more waveforms of given frequency and amplitude, thereby to generate a complex signal.

B.1. Correspondence of Patent Claims to Proposed Count 1

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 18 and 19 of the '887 Patent correspond to proposed Count 1. This correspondence is explained as follows.

Independent claim 18 of the '887 Patent corresponds exactly to proposed Count 1.

Dependent claim 19 of the '887 Patent also corresponds to proposed Count 1. This dependent claim describes is greater detail various aspects of the same invention to which proposed Count 1 is directed.

B.2. Correspondence of Application Claims to Proposed Count 1

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 10 and 11 of this application correspond to proposed Count 1. This correspondence is explained as follows.

Independent claim 10 of the present application corresponds exactly to proposed Count 1.

Dependent claim 11 of the present application also corresponds to proposed Count 1.

This dependent claim describes in greater detail various aspects of the same invention to which proposed Count 1 is directed.

C. Proposed Count 2 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 2 directed to an apparatus that creates non-excitatory electric potential and controls the resulting current:

COUNT 2

Apparatus comprising

circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and

comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity, said circuitry not operating at every beat of the heart.

C.1. Correspondence of Patent Claims to Proposed Count 2

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 1, 4, and 46-50 of the '484 Patent correspond to proposed Count 2. This correspondence is explained as follows.

Independent claims 1, 4, and 46-50 of the '484 Patent correspond to proposed Count 2, although they are not exact duplicates thereof.

One difference between independent claim 1 and proposed Count 2 is that claim 1 recites that the "circuitry for controlling the start time and/or the duration of the electric potential" is a part of the "circuitry for creating a non-excitatory electric potential," whereas proposed Count 2

recites these as two separate structures. There is little meaningful difference between these two descriptions of the invention since the same limitations are recited in each, albeit organized slightly differently. This is not a difference of patentable distinction.

Another difference between independent claim 1 and proposed Count 2 is that claim 1 recites "controlling the start time and/or the duration of the electric potential generated between" two points, whereas proposed Count 2 recites "controlling the start time and/or duration of the electric current flowing between" two points (emphasis added to show contrasting language). As a matter of physics, the start time and duration aspects of the current and the electrical potential in this context are synonymous. In the biomedical context in which this invention operates, there would not be anything to cause current and potential to be shifted or stretched with respect to one another in any meaningful way.

The only difference between independent claim 4 and proposed Count 2 is that claim 4 recites in its preamble that the apparatus is "for selectively and reversibly reducing the oxygen consumption of an area of a muscle," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of reducing oxygen consumption is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breathe life and meaning into the purpose recitation in the preamble.

The only difference between independent claim 46 and proposed Count 2 is that claim 46 recites in its preamble that the apparatus is "for performing heart surgery," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an

intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of surgery is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

One difference between independent claims 47-50 and proposed Count 2 is that the "circuitry for controlling the start time and/or the duration of the electric potential" is a part of the "circuitry for creating a non-excitatory electric potential," whereas proposed Count 2 recites these as two separate structures. There is little meaningful difference between these two descriptions of the invention since the same limitations are recited in each, albeit organized slightly differently. This is not a difference of patentable distinction.

Another difference between independent claim 47 and proposed Count 2 is that claim 47 recites in its preamble that the apparatus is "for promoting the healing of the hibernated area of the cardiac muscle after myocardial infarct," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of promoting healing is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 48 and proposed Count 2 is that claim 48 recites in its preamble that the apparatus is "for promoting the healing of an ischemic area of the cardiac muscle," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of promoting healing is not mentioned in the body of

the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 49 and proposed Count 2 is that claim 49 recites in its preamble that the apparatus is "for treating congenital or acquired hypertrophic cardiomyopathy," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of treating hypertrophic cardiomyopathy is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 50 and proposed Count 2 is that claim 50 recites in its preamble that the apparatus is "for aiding in performing cardiac ablation," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of aiding cardiac ablation is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

The correspondence of independent claims 1, 4, and 46-50 of the '484 Patent to proposed Count 2 is set out in tabular form in Attachment A.

Dependent claim 52 of the '484 Patent also corresponds to proposed Count 2. This dependent claim describes is greater detail various aspects of the same invention to which proposed Count 2 is directed.

C.2. Correspondence of Application Claims to Proposed Count 2

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 12, 14, and 52-56 of this application correspond to proposed Count 2. This correspondence is explained as follows.

Independent claims 12, 14, and 52-56 of the present application correspond to proposed Count 2, although they are not exact duplicates thereof.

One difference between independent claim 12 and proposed Count 2 is that claim 12 recites that the "circuitry for controlling the start time and/or the duration of the electric potential" is a part of the "circuitry for creating a non-excitatory electric potential," whereas proposed Count 2 recites these as two separate structures. There is little meaningful difference between these two descriptions of the invention since the same limitations are recited in each, albeit organized slightly differently. This is not a difference of patentable distinction.

Another difference between independent claim 12 and proposed Count 2 is that claim 12 recites "controlling the start time and/or the duration of the electric potential generated between" two points, whereas proposed Count 2 recites "controlling the start time and/or duration of the electric current flowing between" two points (emphasis added to show contrasting language). As a matter of physics, the start time and duration aspects of the current and the electrical potential in this context are synonymous. In the biomedical context in which this invention operates, there would not be anything to cause current and potential to be shifted or stretched with respect to one another in any meaningful way.

The only difference between independent claim 14 and proposed Count 2 is that claim 14

recites in its preamble that the apparatus is "for selectively and reversibly reducing the oxygen consumption of an area of a muscle," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of reducing oxygen consumption is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

The only difference between independent claim 52 and proposed Count 2 is that claim 52 recites in its preamble that the apparatus is "for performing heart treatment," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of treatment is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

One difference between independent claims 53-56 and proposed Count 2 is that the "circuitry for controlling the start time and/or the duration of the electric potential" is a part of the "circuitry for creating a non-excitatory electric potential," whereas proposed Count 2 recites these as two separate structures. There is little meaningful difference between these two descriptions of the invention since the same limitations are recited in each, albeit organized slightly differently. This is not a difference of patentable distinction.

Another difference between independent claim 53 and proposed Count 2 is that claim 53 recites in its preamble that the apparatus is "for promoting the healing of the hibernated area of the cardiac muscle after myocardial infarct," whereas proposed Count 2 is silent as to what the

apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of promoting healing is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 54 and proposed Count 2 is that claim 54 recites in its preamble that the apparatus is "for promoting the healing of an ischmeic area of the cardiac muscle," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of promoting healing is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 55 and proposed Count 2 is that claim 55 recites in its preamble that the apparatus is "for treating congenital or acquired hypertrophic cardiomyopathy," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of treating hypertrophic cardiomyopathy is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

Another difference between independent claim 56 and proposed Count 2 is that claim 56 recites in its preamble that the apparatus is "for aiding in performing cardiac treatment," whereas proposed Count 2 is silent as to what the apparatus is to be used for. This is merely a recitation

of an intended use of the apparatus and does not materially limit the claim. It is noted that the recited purpose of aiding cardiac treatment is not mentioned in the body of the claim and, thus, the material limitations of the claim do not breath life and meaning into the purpose recitation in the preamble.

The correspondence of independent claims 12, 14, and 52-56 of the present application to proposed Count 2 is set out in tabular form in Attachment B.

Dependent claim 57 of the present application also corresponds to proposed Count 2. This dependent claim describes is greater detail various aspects of the same invention to which proposed Count 2 is directed.

D. Proposed Count 3 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 3 directed to causing non-excitatory electric current to flow between points located in the vicinity of the heart, drafted in the "or" format:

COUNT 3

Implantable apparatus comprising

circuitry for causing a non-excitatory electric current to flow between at least two points located in the vicinity of a muscle and

circuitry for controlling the start time and/or duration of the electric current, wherein said circuitry for controlling does not operate at every beat of the heart.

OR

A method, comprising

causing a non-excitatory electric current to flow between at least two points located in

the vicinity of the muscle, and

controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,

wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,

wherein the non-excitatory DC electric current flows not at every beat of the heart.

D.1. Correspondence of Patent Claims to Proposed Count 3

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 2, 13, 30, and 38 of the '484 Patent correspond to proposed Count 3. This correspondence is explained as follows.

Independent claim 2 of the '484 Patent corresponds exactly to proposed Count 3 (first part).

Dependent claims 13, 30, and 38 of the '484 Patent correspond to proposed Count 3 (second part), although they are not exact duplicates thereof.

Dependent claim 13 recites "for reducing the contraction force of a muscle" (in the preamble of claim 8, by way of claim 13's dependence from claim 8, via claim 12) whereas Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Since claim 30 depends from multiply dependent claim 29, it has the limitations not only of claim 29, but alternatively of claims 16, 20, 21, 24, or 26.

Claim 30/29/16 (claim 30 as dependent from claim 16, via multiply dependent claim 29) recites "reducing the contraction force of a treated area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the treated heart area," whereas proposed Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 30/29/16 and proposed Count 3 (second part) is that claim 30/29/16 recites "for performing heart surgery" in the preamble and a step of "thereafter performing surgery thereon" in the last line. It is noted that only a cursory recitation is made to any surgery in the method and that the claim is really directed to a method of *preparing* to perform surgery. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Claim 30/29/20 (claim 30 as dependent from claim 20, via multiply dependent claim 29) recites "for promoting the healing of the cardiac muscle after myocardial infarct" and that "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area," whereas proposed Count 3 (second part) does not recite such results. The promotion of cardiac muscle healing and reducing muscle contraction are simply inherent results of the recited method steps and, thus, are not patentably distinct limitations.

Claim 30/29/21 (claim 30 as dependent from claim 21, via multiply dependent claim 29) recites "for selectively and reversibly reducing the oxygen consumption of an area of a muscle" and that "electric current being of an intensity and polarity suitable to obtain the desired

reduction in oxygen consumption at the affected heart area," whereas proposed Count 3 (second part) does not recite such results. The reduction of oxygen consumption in muscle is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Claim 30/29/24 (claim 30 as dependent from claim 24, via multiply dependent claim 29) recites "reducing the contraction force of the heart muscle" and the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction" whereas Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 30/29/24 and proposed Count 3 (second part) is that claim 30/29/24 recites "treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Claim 30/29/26 (claim 30 as dependent from claim 26, via multiply dependent claim 29) recites "reducing the contraction force of the area of the cardiac muscle to be ablated" and "to obtain the desired reduction in muscle contraction at the heart area to be ablated," whereas proposed Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 30/29/26 and proposed Count 3 (second part) is that

claim 30/29/26 recites "for performing cardiac ablation" in the preamble and a step of "thereafter performing the ablation thereon" in the last line. It is noted that only a cursory recitation is made to any ablation in the method and that the claim is really directed to a method of *preparing* to perform cardiac ablation. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Dependent claim 38 recites "reducing oxygen consumption" and "thereby reducing the oxygen consumption of the heart" (in claim 34, by way of the dependence of claim 38 from claim 34, via claim 37) whereas Count 3 (second part) does not recite such results. Claim 38 also recites "reducing the contraction force of the heart muscle" (in claim 34, by way of the dependence of claim 38 from claim 34, via claim 37) whereas Count 3 (second part) does not recite such results. The reduction of oxygen consumption and the reduction of muscle contraction force are simply inherent results of the recited method steps and, thus, are not patentably distinct limitations.

Another difference between dependent claim 38 and proposed Count 3 (second part) is that claim 38 recites "for the interim treatment of heart" (in the preamble of claim 34, by way of the dependence of claim 38 from claim 34, via claim 37). Any utility this method may have in interim heart treatment is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

The correspondence of dependent claims 13, 30, and 38 of the '484 Patent to proposed Count 3 (second part) is set out in tabular form in Attachment C.

D.2. Correspondence of Application Claims to Proposed Count 3

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 13, 23, 39, and 46 of this application correspond to proposed Count 3. This correspondence is explained as follows.

Independent claim 13 of the present application corresponds exactly to proposed Count 3 (first part).

Dependent claims 23, 39, and 46 of the present application correspond to proposed Count 3 (second part), although they are not exact duplicates thereof.

Dependent claim 23 recites "for reducing the contraction force of a muscle" (in the preamble of claim 18, by way of claim 23's dependence from claim 18, via claim 22) whereas Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Since claim 39 depends from multiple dependent claim 38, it has the limitations not only of claim 38, but alternatively of claims 25, 29, 30, 33 or 35.

Claim 39/38/25 (claim 39 as dependent from claim 25, via multiply dependent claim 38) recites "reducing the contraction force of a treated area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the treated heart area," whereas proposed Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 39/38/25 and proposed Count 3 (second part) is that claim 39/38/25 recites "for performing heart treatment" in the preamble and a step of "thereafter

performing treatment thereon." It is noted that only a cursory recitation is made to any heart treatment in the method and that the claim is really directed to a method of *preparing* to perform heart treatment. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Claim 39/38/29 (claim 39 as dependent from claim 29, via multiply dependent claim 38) recites "for promoting the healing of the cardiac muscle after myocardial infarct" and that "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area," whereas proposed Count 3 (second part) does not recite such results. The promotion of cardiac muscle healing and reducing muscle contraction are simply inherent results of the recited method steps and, thus, are not patentably distinct limitations.

Claim 39/38/30 (claim 39 as dependent from claim 30, via multiply dependent claim 38) recites "for selectively and reversibly reducing the oxygen consumption of an area of a muscle" and that "electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area," whereas proposed Count 3 (second part) does not recite such results. The reduction of oxygen consumption in muscle is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Claim 39/38/33 (claim 39 as dependent from claim 33, via multiply dependent claim 38) recites "reducing the contraction force of the heart muscle" and the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction" whereas Count 3 (second part) does not recite such results. The reduction of muscle contraction force is

simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 39/38/33 and proposed Count 3 (second part) is that claim 39/38/33 recites "treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Claim 39/38/35 (claim 39 as dependent from claim 35, via multiply dependent claim 38) recites "reducing the contraction force of the area of the cardiac muscle to be treated" and "to obtain the desired reduction in muscle contraction at the heart area to be treated," whereas proposed Count 3 (second part) does not recite such results. The reduction of muscle contraction force is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 39/38/35 and proposed Count 3 (second part) is that claim 39/38/35 recites "for performing cardiac treatment" in the preamble and a step of "thereafter performing the treatment thereon." It is noted that only a cursory recitation is made to any treatment in the method and that the claim is really directed to a method of *preparing* to perform cardiac treatment. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Dependent claim 46 recites "reducing oxygen consumption" and "thereby reducing the oxygen consumption of the heart" (in claim 42, by way of the dependence of claim 46 from claim

42, via claim 45) whereas Count 3 (second part) does not recite such results. Claim 46 also recites "reducing the contraction force of the heart muscle" (in claim 42, by way of the dependence of claim 46 from claim 42, via claim 45) whereas Count 3 (second part) does not recite such results. The reduction of oxygen consumption and the reduction of muscle contraction force are simply inherent results of the recited method steps and, thus, are not patentably distinct limitations.

Another difference between dependent claim 46 and proposed Count 3 (second part) is that claim 46 recites "for the interim treatment of heart" (in the preamble of claim 42, by way of the dependence of claim 46 from claim 42, via claim 45). Any utility this method may have in interim heart treatment is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

The correspondence of dependent claims 23, 39, and 46 of the present application to proposed Count 3 (second part) is set out in tabular form in Attachment D.

E. Proposed Count 4 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 4 directed to creating a non-excitatory electric potential between points located in the vicinity of a muscle, drafted in the "or" format:

COUNT 4

Apparatus for reducing the contraction force of a muscle, comprising:

means for creating an electric potential between at least two points located in the vicinity of the muscle;

means for causing a non-excitatory DC electric current to flow between said at least

two point, if desired; and

means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points.

OR

A method, comprising

creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and

controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.

E.1. Correspondence of Patent Claims to Proposed Count 4

E.1.a The '484 Patent and Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 5-7, 9/7, 15, 17/15, 18/15 19, 22, 23, 25, 32/19, 32/22, and 32/23 of the '484 Patent correspond to proposed Count 4. This correspondence is explained as follows.

Independent claim 5 of the '484 Patent corresponds exactly to proposed Count 4 (first part).

Independent claims 7, 15, 19, 22, 23, and 25 of the '484 Patent correspond to proposed Count 4 (second part), although they are not exact duplicates thereof.

The only difference between claim 7 and proposed Count 4 (second part) is that claim 7 recites "reducing the contraction force of a muscle" in its preamble. One difference between claim 15 and proposed Count 4 (second part) is that claim 15 recites "reducing the contraction

force of a treated area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the treated heart area." One difference between claim 19 and proposed Count 4 (second part) is that claim 19 recites that the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area." One difference between claim 23 and proposed Count 4 (second part) is that claim 23 recites "reducing the contraction force of the heart muscle" and the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction." One difference between claim 25 and proposed Count 4 (second part) is that claim 25 recites "reducing the contraction force of the area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the heart area."

The only difference between claim 22 and proposed Count 4 (second part) is that claim 22 recites "selectively and reversibly reducing the oxygen consumption of an area of a muscle" and the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area."

Another difference between claim 15 and proposed Count 4 (second part) is that claim 15 recites "for performing heart surgery" and the step of "thereafter performing surgery thereon." It is noted that only a cursory recitation is made to any surgery in the method and that the claim is really directed to a method of *preparing* to perform surgery. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Another difference between claim 19 and proposed Count 4 (second part) is that claim 19 recites "promoting the healing of the cardiac muscle after myocardial infarct." The promotion of

cardiac muscle healing is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 23 and proposed Count 4 (second part) is that claim 23 recites "for treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 25 and proposed Count 4 (second part) is that claim 25 recites "for performing cardiac ablation" in the preamble and the step of "thereafter performing the ablation thereon." It is noted that only a cursory recitation is made to any ablation in the method and that the claim is really directed to a method of *preparing* to perform cardiac ablation. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

The correspondence of independent claims 7, 15, 19, 22, 23, and 25 of the '484 Patent to proposed Count 4 (second part) is set out in tabular form in Attachment E.

Dependent claims 6, 9/7, 17/15, 18/15, 32/19, 32/22, and 32/23 of the '484 Patent also correspond to proposed Count 4. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 4 is directed.

E.1.b The '476 Patent and Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claim 23 of the '476 Patent corresponds to proposed Count 4. This correspondence is explained as follows.

Independent claim 23 of the '476 Patent corresponds to proposed Count 4 (second part),

although it is not an exact duplicate thereof.

One difference between claim 23 of the '476 Patent and proposed Count 4 (second part) is that the proposed Count recites broadly a method, whereas the claim recites specifically that the method is for "treating an abnormal activation of the heart, particularly fibrillation." The treatment of the heart, particularly one that happens to be in fibrillation, is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference claim 23 of the '476 Patent and proposed Count 4 (second part) is that the claim recites specifically that electric potential (or equivalently, "field") is applied to the "Right Ventriculum," whereas the proposed Count recites application of such "between at least two points located in the vicinity of the muscle." The choice of which specific muscle region to stimulate is well within the level of ordinary skill in the surgical art and, thus, is not a patentably distinct limitation.

Another difference between claim 23 of the '476 Patent and proposed Count 4 (second part) is that the claim recites:

> of a magnitude, shape and duration suitable to treat the abnormal activation condition, wherein said field is unable to generate a propagating action potential

whereas the proposed Count recites:

> controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.

The results of "said field is unable to generate a propagating action potential" and "non-excitatory electric potential" have the same meaning and are simply expressed in a different form

of words. The sets of parameters controlled in each case are so thoroughly overlapping as to patentably indistinct from one another.

The correspondence of independent claim 23 of the '476 Patent to proposed Count 4 (second part) is set out in tabular form in Attachment F.

E.1.c The '631 Patent and Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 27, 53, and 54 of the '631 Patent correspond to proposed Count 4. This correspondence is explained as follows.

Independent claim 27 of the '631 Patent corresponds to proposed Count 4 (second part), although it is not an exact duplicate thereof.

One difference between claim 27 of the '631 Patent and proposed Count 4 (second part) is that the proposed Count recites broadly a method, whereas the claim recites specifically that the method is for "treating an abnormal activation of the heart, particularly fibrillation." The treatment of the heart, particularly one that happens to be in fibrillation, is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference claim 27 of the '631 Patent and proposed Count 4 (second part) is that the claim recites specifically that electric potential (or equivalently, "field") is applied to the "heart," whereas the proposed Count recites application of such "between at least two points located in the vicinity of the muscle." The choice of which specific muscle region to stimulate is well within the level of ordinary skill in the surgical art and, thus, is not a patentably distinct limitation.

Another difference between claim 27 of the '631 Patent and proposed Count 4 (second part) is that the claim recites:

> of a magnitude, shape and duration suitable to treat the abnormal activation condition, wherein said field is unable to generate a propagating action potential

whereas the proposed Count recites:

> controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.

The results of "said field is unable to generate a propagating action potential" and "non-excitatory electric potential" have the same meaning and are simply expressed in a different form of words. The sets of parameters controlled in each case are so thoroughly overlapping as to patentably indistinct from one another.

Independent claims 53 and 54 of the '631 Patent correspond to proposed Count 4 (first part), although they are not exact duplicates thereof.

One difference between the proposed Count 4 and the claims of the '631 Patent is that the Count recites that its apparatus is "for reducing the contraction force of a muscle," whereas claim 53 describes a "cardiac surgery aiding" apparatus and claim 54 describes a "cardio-vascular surgery aiding" apparatus. This is merely a recitation of an intended use of the apparatus and does not materially limit the claim.

Another difference between the proposed Count 4 and the claims of the '631 Patent is that the Count recites

> means for creating an electric potential between at least two points located in the vicinity of the muscle;

whereas claims 53 and 54 of the '631 Patent recite

> circuitry for generating a non-excitatory electric field.

These two phrases have the same meaning and are simply expressing a description of the same structure in a different form of words.

Another difference between the proposed Count 4 and the claims of the '631 Patent is that the Count recites

> means for causing a non-excitatory DC electric current to flow between said at least two point, if desired

whereas claims 53 and 54 of the '631 Patent recite

> electrodes for applying to a heart or to a portion thereof said non-excitatory electric field.

These two phrases have the same meaning and are simply expressing a description of the same structure in a different form of words. The former is phrased in the form of limitation under § 112, ¶ 6th that embraces a range of functional equivalents, whereas the latter is phrased by articulating a structure that embraces the same function.

Another difference between the proposed Count 4 and the claim 53 of the '631 Patent is that the Count recites

> means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points

whereas claim 53 of the '631 Patent recites

> wherein said circuitry for generating a non-excitatory electric field generate a field of a magnitude, shape duty cycle, phase, frequency and duration suitable to control the electro-mechanical activity of the tissue in

> the area on which surgery is to be performed, and wherein said field is unable to generate a propagating action potential.

The results of "said field is unable to generate a propagating action potential" and "non-excitatory electric potential" have the same meaning and are simply expressed in a different form of words. The sets of parameters controlled in each case are so thoroughly overlapping as to patentably indistinct from one another. The wording as to "the area on which surgery is to be performed" is simply a statement of intended use of the apparatus and does not materially limit the claim.

Another difference between the proposed Count 4 and the claim 54 of the '631 Patent is that the Count recites

> means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points

whereas claim 54 of the '631 Patent recites

> wherein said circuitry for generating a non-excitatory electric field generates a field of a magnitude, shape, duty cycle, phase, frequency and duration suitable to reduce the output flow, contractility, or pressure of said chamber, when surgery is performed on tissue perfused by the flow of said chamber, and wherein said field is unable to generate a propagating action potential, and thereafter performing the required surgical procedure on said area.

The results of "said field is unable to generate a propagating action potential" and "non-excitatory electric potential" have the same meaning and are simply expressed in a different form of words. The sets of parameters controlled in each case are so thoroughly overlapping as to patentably indistinct from one another. The wording as to "reduce the output flow, contractility, or pressure of said chamber, when surgery is performed on tissue perfused by the flow" is simply

a statement of intended use of the apparatus and does not materially limit the claim.

The correspondence of independent claims 27, 53, and 54 of the '631 Patent to proposed Count 4 is set out in tabular form in Attachment G.

E.2. Correspondence of Application Claims to Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 15-17, 19/17, 24, 26/24, 27/24, 28, 31, 32, 34, 40/28, 40/31, and 40/32 of this application correspond to proposed Count 4. This correspondence is explained as follows.

Independent claim 15 of the present application corresponds exactly to proposed Count 4 (first part).

Independent claims 17, 24, 28, 31, 32, and 34 of the present application correspond to proposed Count 4 (second part) although they are not exact duplicates thereof.

The only difference between claim 17 and proposed Count 4 (second part) is that claim 17 recites "reducing the contraction force of a muscle" in its preamble. One difference between claim 24 and proposed Count 4 (second part) is that claim 24 recites "reducing the contraction force of a treated area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the treated heart area." One difference between claim 28 and proposed Count 4 (second part) is that claim 28 recites that the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area." One difference between claim 32 and proposed Count 4 (second part) is that claim 32 recites "reducing the contraction force of the heart muscle" and the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction." One

difference between claim 34 and proposed Count 4 (second part) is that claim 34 recites "reducing the contraction force of the area of the cardiac muscle" and "to obtain the desired reduction in muscle contraction at the heart area."

The only difference between claim 31 and proposed Count 4 (second part) is that claim 31 recites "selectively and reversibly reducing the oxygen consumption of an area of a muscle" and the "electric potential being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area."

Another difference between claim 24 and proposed Count 4 (second part) is that claim 24 recites "for performing heart treatment" and the step of "thereafter performing treatment thereon." Another difference between claim 34 and proposed Count 4 (second part) is that claim 34 recites "for performing cardiac treatment" in the preamble and the step of "thereafter performing the treatment thereon." It is noted that only a cursory recitation is made to any treatment in the claimed method and that these claims are really directed to a method of *preparing* to perform cardiac treatment. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Another difference between claim 28 and proposed Count 4 (second part) is that claim 28 recites "promoting the healing of the cardiac muscle after myocardial infarct." The promotion of cardiac muscle healing is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 32 and proposed Count 4 (second part) is that claim 32 recites "for treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any

utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

The correspondence of dependent claims 17, 24, 28, 31, 32, and 34 of the present application to proposed Count 4 (second part) is set out in tabular form in Attachment H.

Dependent claims 16, 19/17, 26/24, 27/24, 40/28, 40/31, and 40/32 of the present application also correspond to proposed Count 4. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 4 is directed.

F. Proposed Count 5 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 5 directed to a method that causes a non-excitatory electric current to flow between points located in the vicinity of a muscle:

COUNT 5

A method, comprising

causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and

controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.

F.1. Correspondence of Patent Claims to Proposed Count 5

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 8, 9/8, 10-12, 16, 17/16, 18/16, 20, 21, 24, 26-29, 32/16, 32/20, 32/21, and 32/24 of the '484 Patent correspond to proposed Count 5. This correspondence is explained as follows.

Independent claims 8, 16, 20, 21, 24, and 26 of the '484 Patent correspond to proposed Count 5 although they are not exact duplicates thereof.

The only difference between claim 8 and proposed Count 5 is that claim 8 recites "for reducing the contraction force of a muscle" in the preamble. One difference between claim 16 and proposed Count 5 is that claim 16 recites "reducing the contraction force of a treated area of the cardiac muscle" and to "obtain the desired reduction in muscle contraction at the treated heart area." One difference between claim 20 and proposed Count 5 is the recitation of the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area." One difference between claim 24 and proposed Count 5 is that claim 24 recites "reducing the contraction force of the heart muscle" and the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction." One difference between claim 26 and proposed Count 5 is that claim 26 recites "reducing the contraction force of the area of the cardiac muscle" and "thereby to obtain the desired reduction in muscle contraction at the heart area."

The only difference between claim 21 and proposed Count 5 is the recitation of "for selectively and reversibly reducing the oxygen consumption of an area of a muscle" in the preamble, and of the "electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area."

Another difference between claim 16 and proposed Count 5 is that claim 16 recites "for performing heart surgery" and the step of "thereafter performing surgery thereon." It is noted that only a cursory recitation is made to any surgery in the method and that the claim is really directed to a method of *preparing* to perform surgery. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Another difference between claim 20 and proposed Count 5 is that claim 20 recites "promoting the healing of the cardiac muscle after myocardial infarct." The promotion of cardiac muscle healing is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 24 and proposed Count 5 is that claim 24 recites "for treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 26 and proposed Count 5 is that claim 26 recites "for performing cardiac ablation" in the preamble and the step of "thereafter performing the ablation thereon." It is noted that only a cursory recitation is made to any ablation in the method and that the claim is really directed to a method of *preparing* to perform cardiac ablation. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

The correspondence of independent claims 8, 16, 20, 21, 24, and 26 of the '484 Patent to proposed Count 5 is set out in tabular form in Attachment I.

Dependent claims 9/8, 10-12, 17/16, 18/16, 27-29, 32/16, 32/20, 32/21, and 32/24 of the

'484 Patent also correspond to proposed Count 5. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 5 is directed.

F.2. Correspondence of Application Claims to Proposed Count 5

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 18, 19/18, 20-22, 25, 26/25, 27/25, 29, 30, 33, 35-38, 40/25, 40/29, 40/30, and 40/33 of this application correspond to proposed Count 5. This correspondence is explained as follows.

Independent claims 18, 25, 29, 30, 33, and 35 of the present application correspond to proposed Count 5 although they are not exact duplicates thereof.

The only difference between claim 18 and proposed Count 5 is that claim 18 recites "for reducing the contraction force of a muscle" in the preamble. One difference between claim 25 and proposed Count 5 is that claim 25 recites "reducing the contraction force of a treated area of the cardiac muscle" and to "obtain the desired reduction in muscle contraction at the treated heart area." One difference between claim 29 and proposed Count 5 is that claim 29 recites the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area." One difference between claim 33 and proposed Count 5 is that claim 33 recites "reducing the contraction force of the heart muscle" and the "electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction." One difference between claim 35 and proposed Count 5 is that claim 35 recites "reducing the contraction force of the area of the cardiac muscle" and "thereby to obtain the desired reduction in muscle contraction at the heart area."

The only difference between claim 30 and proposed Count 5 is that claim 30 recites "for selectively and reversibly reducing the oxygen consumption of an area of a muscle" in the preamble, and the "electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area."

Another difference between claim 25 and proposed Count 5 is that claim 25 recites "for performing heart treatment" and the step of "thereafter performing treatment thereon." It is noted that only a cursory recitation is made to any heart treatment in the method and that the claim is really directed to a method of *preparing* to perform heart treatment. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

Another difference between claim 29 and proposed Count 5 is that claim 29 recites "promoting the healing of the cardiac muscle after myocardial infarct." The promotion of cardiac muscle healing is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 33 and proposed Count 5 is that claim 33 recites "for treating congenital or acquired hypertrophic cardiomyopathy" in the preamble. Any utility this method may have in treatment of hypertrophic cardiomayopathy is simply an inherent result of the recited method steps and, thus, is not a patentably distinct limitation.

Another difference between claim 35 and proposed Count 5 is that claim 35 recites "for performing cardiac treatment" in the preamble and the step of "thereafter performing the treatment thereon." It is noted that only a cursory recitation is made to any cardiac treatment in the method and that the claim is really directed to a method of *preparing* to perform cardiac

treatment. That is simply an intended purpose of the method and does not amount to a patentably distinct limitation.

The correspondence of independent claims 18, 25, 29, 30, 33, and 35 of the present application to proposed Count 5 is set out in tabular form in Attachment J.

Dependent claims 19/18, 20-22, 26/25, 27/25, 36-38, 40/25, 40/29, 40/30, and 40/33 of the present application also correspond to proposed Count 5. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 5 is directed.

G. Proposed Count 6 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 6 directed to creating a non-excitatory electric potential between points located in the vicinity of a muscle:

COUNT 6

A method for reducing the contraction force of a muscle, comprising:

providing means for creating an electric potential between at least two points located in the vicinity of the muscle;

providing means for causing a non-excitatory DC electric current to flow between said at least two point;

providing means for switching the current polarity between said at least two points; and

providing means for controlling the start time, duration and magnitude of the electric current flowing between said at least two points.

G.1. Correspondence of Patent Claims to Proposed Count 6

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 40-43 of the '484 Patent correspond to proposed Count 6. This correspondence is explained as follows.

Independent claim 40 of the '484 Patent corresponds exactly to proposed Count 6.

Dependent claims 41-43 of the '484 Patent also correspond to proposed Count 6. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 6 is directed.

G.2. Correspondence of Application Claims to Proposed Count 6

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 47-50 of this application correspond to proposed Count 6. This correspondence is explained as follows.

Independent claim 47 of the present application corresponds exactly to proposed Count 6.

Dependent claims 48-50 of the present application also correspond to proposed Count 6. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 6 is directed.

H. Proposed Count 7 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 7 directed to creating a non-excitatory electric potential between points located in the vicinity of a muscle:

COUNT 7

A method for reducing the contraction force of a muscle, comprising:

providing means for creating an electric potential between at least two points located in the vicinity of the muscle;

providing means for causing a non-excitatory DC electric current to flow between

said at least two point;

providing means for switching the current polarity between said at least two points; and

providing means for controlling the start time, duration and magnitude of the electric current flowing between said at least two points;

wherein the means for causing a non-excitatory DC electric current to flow, are synchronized to heart activity; and

wherein the means for causing a non-excitatory DC electric current to flow operate not at every beat of the heart.

H.1. Correspondence of Patent Claims to Proposed Count 7

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claim 44 of the '484 Patent corresponds to proposed Count 7. This correspondence is explained as follows.

Dependent claim 44/43/40 of the '484 Patent corresponds exactly to proposed Count 7.

Dependent claim 44/43/41/40 of the '484 Patent also corresponds to proposed Count 7. That is because this dependent claim describes in greater detail aspects of the same invention to which proposed Count 7 is directed.

H.2. Correspondence of Application Claims to Proposed Count 7

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claim 51 of this application correspond to proposed Count 7. This correspondence is explained as follows.

Dependent claim 51/50/47 of the present application corresponds exactly to proposed Count 7.

Dependent claim 51/50/48/47 of the present application also corresponds to proposed Count 7. That is because this dependent claim describes in greater detail aspects of the same

invention to which proposed Count 7 is directed.

I. Proposed Count 8 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 8 directed to creating a non-excitatory electric potential between points located in the vicinity of a muscle:

COUNT 8

A method for the interim treatment of a heart in need of reducing oxygen consumption, comprising reducing the contraction force of the heart muscle by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area, thereby reducing the oxygen consumption of the heart.

I.1. Correspondence of Patent Claims to Proposed Count 8

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claim 33 of the '484 Patent corresponds to proposed Count 8. This correspondence is explained as follows: independent claim 33 of the '484 Patent corresponds exactly to proposed Count 8.

I.2. Correspondence of Application Claims to Proposed Count 8

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claim 41 of this application corresponds to proposed Count 8. This correspondence is explained as follows: independent claim 41 of the present application corresponds exactly to proposed Count 8.

J. Proposed Count 9 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 9

directed to a method that causes a non-excitatory electric current to flow between points located in the vicinity of a muscle:

COUNT 9

A method for the interim treatment of heart in need of reducing oxygen consumption, comprising reducing the contraction force of a the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area, thereby reducing the oxygen consumption of the heart.

J.1. Correspondence of Patent Claims to Proposed Count 9

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 34-37 of the '484 Patent corresponds to proposed Count 9. This correspondence is explained as follows.

Independent claim 34 of the '484 Patent corresponds exactly to proposed Count 9.

Dependent claims 35-37 of the '484 Patent also correspond to proposed Count 9. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 9 is directed.

J.2. Correspondence of Application Claims to Proposed Count 9

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 42-45 of this application correspond to proposed Count 9. This correspondence is explained as follows.

Independent claim 42 of the present application corresponds exactly to proposed Count 9.

Dependent claims 43-45 of the present application also correspond to proposed Count 9. That is because these dependent claims describe in greater detail various aspects of the same

invention to which proposed Count 9 is directed.

K. Proposed Count 10 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 10 directed to a heart pacing apparatus:

COUNT 10

Apparatus for heart pacing with cardiac output modification, comprising:

one or more electrodes adapted to apply electrical signals to cardiac muscle segments;

signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and

at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

K.1. Correspondence of Patent Claims to Proposed Count 10

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 2-5 of the '324 Patent correspond to proposed Count 10. This correspondence is explained as follows.

Independent claims 2-5 of the '324 Patent correspond to proposed Count 10, although they are not exact duplicates thereof.

The only difference between independent claim 2 of the '324 Patent and proposed Count 10 is that the claim recites specifically a "pressure sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose

of sensing cardiac activity. Selecting one of these known sensors, such as a pressure sensor, is not a choice of patentable distinction.

The only difference between independent claim 3 of the '324 Patent and proposed Count 10 is that the claim recites specifically a "flow rate sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a flow rate sensor, is not a choice of patentable distinction.

The only difference between independent claim 4 of the '324 Patent and proposed Count 10 is that the claim recites specifically a "oxygen sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as an oxygen sensor, is not a choice of patentable distinction.

The only difference between independent claim 5 of the '324 Patent and proposed Count 10 is that the claim recites specifically a "temperature sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a temperature sensor, is not a choice of patentable distinction.

The correspondence of independent claims 2-5 of the '324 Patent to proposed Count 10 is

set out in tabular form in Attachment K.

K.2. Correspondence of Application Claims to Proposed Count 10

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claim 58-60 of this application correspond to proposed Count 10. This correspondence is explained as follows.

Independent claim 59 of the present application corresponds exactly to proposed Count 10.

Independent claims 58 and 60 of the present application correspond to proposed Count 10, although they are not exact duplicates thereof.

The only difference between independent claim 58 of the present application and proposed Count 10 is that the claim recites specifically a "pressure sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a pressure sensor, is not a choice of patentable distinction.

The only difference between independent claim 60 of the present application and proposed Count 10 is that the claim recites specifically a "oxygen sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as an oxygen sensor, is not a choice of patentable distinction.

The correspondence of independent claims 58 and 60 of the present application to

proposed Count 10 is set out in tabular form in Attachment L.

L. Proposed Count 11 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 11 directed to a method for heart pacing:

COUNT 11

A method for heart pacing with modification of cardiac contraction, comprising the steps of:

(a) fixing at least one electrode to tissue of a subject's heart;

(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and

(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

L.1. Correspondence of Patent Claims to Proposed Count 11

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 8-10 of the '324 Patent corresponds to proposed Count 11. This correspondence is explained as follows.

Independent claims 8-10 of the '324 Patent correspond to proposed Count 11, although they are not exact duplicates thereof.

The only difference between claim 8 of the '324 Patent and proposed Count 11 is that proposed Count 11 recites the step:

(a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 8 of the '324 Patent recites the steps:

(a) implanting a pacing electrode in a first chamber of a subject's heart;

(b) implanting a non-excitatory stimulation electrode in another chamber of the subject's heart.

The single step recitation of the proposed Count and the two step recitation of the patented claim have the same essential meaning and are simply expressed in a different form of words. Although the single step phrasing only explicitly recites one electrode, simple physics dictates that a second electrode be present in order for a closed loop of current to flow through the tissue. Thus, these two phrasings are a difference without distinction.

The only difference between claim 9 of the '324 Patent and proposed Count 11 is that proposed Count 11 recites the step:

(a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 9 of the '324 Patent recites the step:

(a) implanting at least one non-excitatory stimulation electrode in each of a plurality of chambers of a subject's heart;

These two method step descriptions have the same essential meaning and are simply expressed in a different form of words. Any difference is without distinction. The choice of placement of electrodes is well within the skill of persons of skill in the surgical art.

The only difference between claim 10 of the '324 Patent and proposed Count 11 is that proposed Count 11 recites the step:

(a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 10 of the '324 Patent recites the step:

(a) fixing at least one electrode to the epicardium of a subject's heart;

These two method step descriptions have the same essential meaning and are simply expressed in a different form of words. Any difference is without distinction. The choice of placement of electrodes is well within the skill of persons of skill in the surgical art.

The correspondence of independent claims 8-10 of the '324 Patent to proposed Count 11 is set out in tabular form in Attachment M.

L.2. Correspondence of Application Claims to Proposed Count 11

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 61-63 of this application correspond to proposed Count 11. This correspondence is explained as follows.

Independent claims 61-63 of the present application correspond to proposed Count 11, although they are not exact duplicates thereof.

The only difference between claim 61 of the present application and proposed Count 11 is that proposed Count 11 recites the step:

> (a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 61 of the present application recites the steps:

> (a) implanting a pacing electrode in a first chamber of a subject's heart;
> (b) implanting a non-excitatory stimulation electrode in another chamber of the subject's heart.

The single step recitation of the proposed Count and the two step recitation of the patented claim have the same essential meaning and are simply expressed in a different form of words. Although the single step phrasing only explicitly recites one electrode, simple physics dictates that a second electrode be present in order for a closed loop of current to flow through the tissue. Thus, these two phrasings are a difference without distinction.

The only difference between claim 62 of the present application and proposed Count 11 is that proposed Count 11 recites the step:

(a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 62 of the present application recites the step:

(a) implanting at least one non-excitatory stimulation electrode in each of a plurality of chambers of a subject's heart;

These two method step descriptions have the same essential meaning and are simply expressed in a different form of words. Any difference is without distinction. The choice of placement of electrodes is well within the skill of persons of skill in the surgical art.

The only difference between claim 63 of the present application and proposed Count 11 is that proposed Count 11 recites the step:

(a) fixing at least one electrode to tissue of a subject's heart;

whereas claim 63 of the present application recites the step:

(a) fixing at least one electrode to the epicardium of a subject's heart;

These two method step descriptions have the same essential meaning and are simply expressed in a different form of words. Any difference is without distinction. The choice of placement of electrodes is well within the skill of persons of skill in the surgical art.

The correspondence of independent claims 61-63 of the present application to proposed Count 11 is set out in tabular form in Attachment N.

M. Proposed Count 12 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 12 directed to method for heart pacing:

COUNT 12

A method for heart pacing with modification of cardiac contraction, comprising the steps of:

(a) applying one or more electrodes to a subject's heart;

(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;

(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and

(d) applying a sensor which senses cardiac activity to the subject's body,

wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

M.1. Correspondence of Patent Claims to Proposed Count 12

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 12-15 of the '324 Patent corresponds to proposed Count 12. This correspondence is explained as follows.

Independent claims 12-15 of the '324 Patent correspond to proposed Count 12, although they are not exact duplicates thereof.

The only difference between independent claim 12 of the '324 Patent and proposed Count 12 is that the claim recites specifically a "flow sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a flow sensor, is not a choice of patentable distinction.

The only difference between independent claim 13 of the '324 Patent and proposed Count 12 is that the claim recites specifically a "pressure sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a pressure sensor, is not a choice of patentable distinction.

The only difference between independent claim 14 of the '324 Patent and proposed Count 12 is that the claim recites specifically a "oxygen sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as an oxygen sensor, is not a choice of patentable distinction.

The only difference between independent claim 15 of the '324 Patent and proposed Count 12 is that the claim recites specifically a "temperature sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a temperature sensor, is not a choice of patentable distinction.

The correspondence of independent claims 12-15 of the '324 Patent to proposed Count 12 is set out in tabular form in Attachment O.

M.2. Correspondence of Application Claims to Proposed Count 12

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 64-66 of this application correspond to proposed Count 12. This correspondence is explained as follows.

Independent claim 64 of the present application corresponds exactly to proposed Count 12.

Independent claims 65 and 66 of the present application correspond to proposed Count 12, although they are not exact duplicates thereof.

The only difference between independent claim 65 of the present application and proposed Count 12 is that the claim recites specifically a "pressure sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as a pressure sensor, is not a choice of patentable distinction.

The only difference between independent claim 66 of the present application and proposed Count 12 is that the claim recites specifically a "oxygen sensor which senses cardiac activity," whereas the proposed Count broadly describes a "sensor which senses cardiac activity." A wide range of sensors was known in the art at the time this invention was made that are useful for the purpose of sensing cardiac activity. Selecting one of these known sensors, such as an oxygen sensor, is not a choice of patentable distinction.

The correspondence of independent claims 65 and 66 of the present application to proposed Count 12 is set out in tabular form in Attachment P.

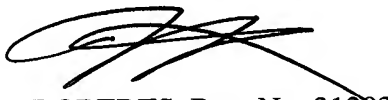
N. Application Of The Terms Of Application Claims To The Disclosure Of The Application

In accordance with 37 C.F.R. § 1.607(a)(5), Applicant applies the terms of the new application claims 10 through 66 to Applicant's own disclosure. Please refer to Attachment Q, which sets out in detail how the Applicant's disclosure supports each and every limitation of claims 10 through 66.

O. Conclusion

For the above reasons, Applicant respectfully submits that it is appropriate for the Examiner to declare an interference between the present application and U.S.P. 6,236,887, U.S.P. 6,233,484, U.S.P. 6,463,324, U.S.P. 6,330,476, and U.S.P. 6,317,631. Early notice of such is respectfully requested.

Respectfully submitted,
ROBERTS ABOKHAIR & MARDULA, LLC



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Attachment A

PROPOSED COUNT 2	CLAIM 1 OF '484 PATENT
Apparatus comprising	Apparatus comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of a muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or the duration of the electric potential generated between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 4 OF '484 PATENT
Apparatus comprising	Apparatus for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 46 OF '484 PATENT
Apparatus comprising	Apparatus for performing heart surgery, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the heart muscle and
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	wherein said circuitry for controlling does not operate at every beat of the heart.

PROPOSED COUNT 2	CLAIM 47 OF '484 PATENT
Apparatus comprising	Apparatus for promoting the healing of the hibernated area of the cardiac muscle after myocardial infarct, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 48 OF '484 PATENT
Apparatus comprising	Apparatus for promoting the healing of an ischmeic area of the cardiac muscle, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuit not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 49 OF '484 PATENT
Apparatus comprising	Apparatus for treating congenital or acquired hypertrophic cardiomyopathy, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said current not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 50 OF '484 PATENT
Apparatus comprising	Apparatus for aiding in performing cardiac ablation, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

Attachment B

PROPOSED COUNT 2	CLAIM 12 OF '750 APPLICATION
Apparatus comprising	Apparatus comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of a muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or the duration of the electric potential generated between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 14 OF '750 APPLICATION
Apparatus comprising	Apparatus for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 52 OF '750 APPLICATION
Apparatus comprising	Apparatus for performing heart treatment, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the heart muscle and
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	wherein said circuitry for controlling does not operate at every beat of the heart.

PROPOSED COUNT 2	CLAIM 53 OF '750 APPLICATION
Apparatus comprising	Apparatus for promoting the healing of the hibernated area of the cardiac muscle after myocardial infarct, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 54 OF '750 APPLICATION
Apparatus comprising	Apparatus for promoting the healing of an ischmeic area of the cardiac muscle, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuit not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 55 OF '750 APPLICATION
Apparatus comprising	Apparatus for treating congenital or acquired hypertrophic cardiomyopathy, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said current not operating at every beat of the heart.

PROPOSED COUNT 2	CLAIM 56 OF '750 APPLICATION
Apparatus comprising	Apparatus for aiding in performing cardiac treatment, comprising
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising
comprising circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,
said circuitry not operating at every beat of the heart.	said circuitry not operating at every beat of the heart.

Attachment C

PROPOSED COUNT 3 (SECOND PART)	CLAIM 13 OF '484 PATENT
A method, comprising	A method for reducing the contraction force of a muscle, comprising *(from claim 8, by reference via claims 12)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 8, by reference via claims 12)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points. *(from claim 8, by reference via claims 12)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to claim 8, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 12, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 12, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 13)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/16 OF '484 PATENT
A method, comprising	A method for performing heart surgery, comprising *(from claim 16, by reference via claims 29)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 16, by reference via claims 29)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/16 OF '484 PATENT
	and *(from claim 16, by reference via claims 29)*
--	thereafter performing surgery thereon. *(from claim 16, by reference via claims 29)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 16, 20, 21, 24 or 26, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 29, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 29, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 30)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/20 OF '484 PATENT
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising *(from claim 20, by reference via claims 29)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 20, by reference via claims 29)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 20, by reference via claims 29)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area. *(from claim 20, by reference via claims 29)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 16, 20, 21, 24 or 26, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 29, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 29, wherein the non-excitatory DC electric current flows not at

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/20 OF '484 PATENT
	every beat of the heart. *(claim 30)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/21 OF '484 PATENT
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising *(from claim 21, by reference via claims 29)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 21, by reference via claims 29)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 21, by reference via claims 29)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area. *(from claim 21, by reference via claims 29)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 16, 20, 21, 24 or 26, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 29, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 29, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 30)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/24 OF '484 PATENT
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising *(from claim 24, by reference via claims 29)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by causing a non-excitatory electric current to flow between at least two points

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/24 OF '484 PATENT
	located in the vicinity of the muscle, and *(from claim 24, by reference via claims 29)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 24, by reference via claims 29)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction. *(from claim 24, by reference via claims 29)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 16, 20, 21, 24 or 26, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 29, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 29, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 30)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/26 OF '484 PATENT
A method, comprising	A method for performing cardiac ablation, comprising *(from claim 26, by reference via claims 29)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the area of the cardiac muscle to be ablated, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 26, by reference via claims 29)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be ablated, and *(from claim 26, by reference via claims 29)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 30/29/26 OF '484 PATENT
--	thereafter performing the ablation thereon. *(from claim 26, by reference via claims 29)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 16, 20, 21, 24 or 26, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 29, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 29, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 30)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 38 OF '484 PATENT
A method, comprising	A method for the interim treatment of heart in need of reducing oxygen consumption, comprising *(from claim 34, by reference via claims 37)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area, *(from claim 34, by reference via claims 37)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	thereby reducing the oxygen consumption of the heart. *(from claim 34, by reference via claims 37)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to claim 34, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 37, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 37, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 38)*

Attachment D

PROPOSED COUNT 3 (SECOND PART)	CLAIM 23 OF '750 APPLICATION
A method, comprising	A method for reducing the contraction force of a muscle, comprising *(from claim 18, by reference via claims 22)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 18, by reference via claims 22)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points. *(from claim 18, by reference via claims 22)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to claim 18, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 22, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 22, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 23)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/25 OF '750 APPLICATION
A method, comprising	A method for performing heart treatment, comprising *(from claim 25, by reference via claims 38)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 25, by reference via claims 38)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/25 OF '750 APPLICATION
	and *(from claim 25, by reference via claims 38)*
--	thereafter performing surgery thereon. *(from claim 25, by reference via claims 38)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 38, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 38, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 39)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/29 OF '750 APPLICATION
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising *(from claim 29, by reference via claims 38)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 29, by reference via claims 38)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 29, by reference via claims 38)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area. *(from claim 29, by reference via claims 38)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 38, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 38, wherein the non-excitatory DC electric current flows not at

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/29 OF '750 APPLICATION
	every beat of the heart. *(claim 39)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/30 OF '750 APPLICATION
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising *(from claim 30, by reference via claims 38)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 30, by reference via claims 38)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 30, by reference via claims 38)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area. *(from claim 30, by reference via claims 38)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 38, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 38, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 39)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/33 OF '750 APPLICATION
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising *(from claim 33, by reference via claims 38)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by causing a non-excitatory electric current to flow between at least two points

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/33 OF '750 APPLICATION
	located in the vicinity of the muscle, and *(from claim 33, by reference via claims 38)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, *(from claim 33, by reference via claims 38)*
--	said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction. *(from claim 33, by reference via claims 38)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 38, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 38, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 39)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/35 OF '750 APPLICATION
A method, comprising	A method for performing cardiac treatment, comprising *(from claim 35, by reference via claims 38)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the area of the cardiac muscle to be ablated, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and *(from claim 35, by reference via claims 38)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be ablated, and *(from claim 35, by reference via claims 38)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 39/38/35 OF '750 APPLICATION
--	thereafter performing the ablation thereon. *(from claim 35, by reference via claims 38)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 38, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 38, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 39)*

PROPOSED COUNT 3 (SECOND PART)	CLAIM 46 OF '750 APPLICATION
A method, comprising	A method for the interim treatment of heart in need of reducing oxygen consumption, comprising *(from claim 42, by reference via claims 45)*
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area, *(from claim 42, by reference via claims 45)*
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	thereby reducing the oxygen consumption of the heart. *(from claim 42, by reference via claims 45)*
wherein the flow of the non-excitatory DC electric current is synchronized to heart activity,	A method according to claim 42, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity. *(from claim 45, by reference)*
wherein the non-excitatory DC electric current flows not at every beat of the heart.	A method according to claim 45, wherein the non-excitatory DC electric current flows not at every beat of the heart. *(claim 46)*

Attachment E

PROPOSED COUNT 4 (SECOND PART)	CLAIM 7 OF '484 PATENT
A method, comprising	A method for reducing the contraction force of a muscle, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 15 OF '484 PATENT
A method, comprising	A method for performing heart surgery, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and
--	thereafter performing surgery thereon.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 19 OF '484 PATENT
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric

PROPOSED COUNT 4 (SECOND PART)	CLAIM 19 OF '484 PATENT
potential created between said at least two points.	potential created between said at least two points, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 22 OF '484 PATENT
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of said non-excitatory electric potential, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 23 OF '484 PATENT
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 25 OF '484 PATENT
A method, comprising	A method for performing cardiac ablation, comprising
creating a non-excitatory electric potential	reducing the contraction force of the area of the

PROPOSED COUNT 4 (SECOND PART)	CLAIM 25 OF '484 PATENT
between at least two points located in the vicinity of the muscle, and	cardiac muscle to be ablated, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be ablated, and
	thereafter performing the ablation thereon.

Attachment F

PROPOSED COUNT 4 (SECOND PART)	CLAIM 23 OF '476 PATENT
A method, comprising	A method of treating an abnormal activation of the heart, particularly fibrillation, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	applying to the Right Ventriculum of said heart a non-excitatory electric field
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	of a magnitude, shape and duration suitable to treat the abnormal activation condition, wherein said field is unable to generate a propagating action potential.

Attachment G

PROPOSED COUNT 4 (SECOND PART)	CLAIM 27 OF '631 PATENT
A method, comprising	A method of treating an abnormal activation of the heart, particularly fibrillation, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	applying to said heart or to a portion thereof a non-excitatory electric field
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	of a magnitude, shape and duration suitable to treat the abnormal activation condition, wherein said field is unable to generate a propagating action potential.

PROPOSED COUNT 4 (FIRST PART)	CLAIM 53 OF '631 PATENT
Apparatus for reducing the contraction force of a muscle, comprising:	Cardiac surgery aiding apparatus, comprising
means for creating an electric potential between at least two points located in the vicinity of the muscle;	circuitry for generating a non-excitatory electric field, and
means for causing a non-excitatory DC electric current to flow between said at least two point, if desired; and	electrodes for applying to a heart or to a portion thereof said non-excitatory electric field,
means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points.	wherein said circuitry for generating a non-excitatory electric field generate a field of a magnitude, shape duty cycle, phase, frequency and duration suitable to control the electro-mechanical activity of the tissue in the area on which surgery is to be performed, and wherein said field is unable to generate a propagating action potential.

PROPOSED COUNT 4 (FIRST PART)	CLAIM 54 OF '631 PATENT
Apparatus for reducing the contraction force of a muscle, comprising:	Cardio-vascular surgery aiding apparatus, comprising
means for creating an electric potential between at least two points located in the vicinity of the muscle;	circuitry for generating a non-excitatory electric field, and

means for causing a non-excitatory DC electric current to flow between said at least two point, if desired; and	electrodes for applying to a heart chamber or to a portion thereof said non-excitatory electric field to modify an activity of the heart or a portion thereof,
means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points.	wherein said circuitry for generating a non-excitatory electric field generates a field of a magnitude, shape, duty cycle, phase, frequency and duration suitable to reduce the output flow, contractility, or pressure of said chamber, when surgery is performed on tissue perfused by the flow of said chamber, and wherein said field is unable to generate a propagating action potential, and thereafter performing the required surgical procedure on said area.

Attachment H

PROPOSED COUNT 4 (SECOND PART)	CLAIM 17 OF '750 APPLICATION
A method, comprising	A method for reducing the contraction force of a muscle, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 24 OF '750 APPLICATION
A method, comprising	A method for performing heart treatment, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and
--	thereafter performing treatment thereon.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 28 OF '750 APPLICATION
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric

PROPOSED COUNT 4 (SECOND PART)	CLAIM 28 OF '750 APPLICATION
potential created between said at least two points.	potential created between said at least two points, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 31OF '750 APPLICATION
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of said non-excitatory electric potential, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 32 OF '750 APPLICATION
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.

PROPOSED COUNT 4 (SECOND PART)	CLAIM 34OF '750 APPLICATION
A method, comprising	A method for performing cardiac treatment, comprising
creating a non-excitatory electric potential	reducing the contraction force of the area of the

PROPOSED COUNT 4 (SECOND PART)	CLAIM 34OF '750 APPLICATION
between at least two points located in the vicinity of the muscle, and	cardiac muscle to be treated, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be treated, and
	thereafter performing the treatment thereon.

Attachment I

PROPOSED COUNT 5	CLAIM 8 OF '484 PATENT
A method, comprising	A method for reducing the contraction force of a muscle, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.

PROPOSED COUNT 5	CLAIM 16 OF '484 PATENT
A method, comprising	A method for performing heart surgery, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and
--	thereafter performing surgery thereon.

PROPOSED COUNT 5	CLAIM 20 OF '484 PATENT
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric

PROPOSED COUNT 5	CLAIM 20 OF '484 PATENT
current flowing between said at least two points.	current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.

PROPOSED COUNT 5	CLAIM 21 OF '484 PATENT
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.

PROPOSED COUNT 5	CLAIM 24 OF '484 PATENT
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.

PROPOSED COUNT 5	CLAIM 26 OF '484 PATENT
A method, comprising	A method for performing cardiac ablation, comprising

PROPOSED COUNT 5	CLAIM 26 OF '484 PATENT
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the area of the cardiac muscle to be ablated, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be ablated, and
--	thereafter performing the ablation thereon.

Attachment J

PROPOSED COUNT 5	CLAIM 18 OF '750 APPLICATION
A method, comprising	A method for reducing the contraction force of a muscle, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.

PROPOSED COUNT 5	CLAIM 25 OF '750 APPLICATION
A method, comprising	A method for performing heart treatment, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of a treated area of the cardiac muscle, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and
--	thereafter performing treatment thereon.

PROPOSED COUNT 5	CLAIM 29 OF '750 APPLICATION
A method, comprising	A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric

PROPOSED COUNT 5	CLAIM 29 OF '750 APPLICATION
current flowing between said at least two points.	current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.

PROPOSED COUNT 5	CLAIM 30 OF '750 APPLICATION
A method, comprising	A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.

PROPOSED COUNT 5	CLAIM 33 OF '750 APPLICATION
A method, comprising	A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.

PROPOSED COUNT 5	CLAIM 35 OF '750 APPLICATION
A method, comprising	A method for performing cardiac treatment, comprising

PROPOSED COUNT 5	CLAIM 35 OF '750 APPLICATION
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	reducing the contraction force of the area of the cardiac muscle to be treated, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be treated, and
--	thereafter performing the treatment thereon.

Attachment K

PROPOSED COUNT 10	CLAIM 2 OF '324 PATENT
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one pressure sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

PROPOSED COUNT 10	CLAIM 3 OF '324 PATENT
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one flow rate sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

PROPOSED COUNT 10	CLAIM 4 OF '324 PATENT
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one oxygen sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

PROPOSED COUNT 10	CLAIM 5 OF '324 PATENT
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one temperature sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

Attachment L

PROPOSED COUNT 10	CLAIM 58 OF '750 APPLICATION
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one pressure sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

PROPOSED COUNT 10	CLAIM 60 OF '750 APPLICATION
Apparatus for heart pacing with cardiac output modification, comprising:	Apparatus for heart pacing with cardiac output modification, comprising:
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	one or more electrodes adapted to apply electrical signals to cardiac muscle segments;
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	at least one oxygen sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.

Attachment M

PROPOSED COUNT 11	CLAIM 8 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a subject's heart;	(a) implanting a pacing electrode in a first chamber of a subject's heart; (b) implanting a non-excitatory stimulation electrode in another chamber of the subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(c) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(d) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

PROPOSED COUNT 11	CLAIM 9 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a subject's heart;	(a) implanting at least one non-excitatory stimulation electrode in each of a plurality of chambers of a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

PROPOSED COUNT 11	CLAIM 10 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a	(a) fixing at least one electrode to the

PROPOSED COUNT 11	CLAIM 10 OF '324 PATENT
subject's heart;	epicardium of a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

Attachment N

PROPOSED COUNT 11	CLAIM 61 OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a subject's heart;	(a) implanting a pacing electrode in a first chamber of a subject's heart; (b) implanting a non-excitatory stimulation electrode in another chamber of the subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(c) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(d) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

PROPOSED COUNT 11	CLAIM 62 OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a subject's heart;	(a) implanting at least one non-excitatory stimulation electrode in each of a plurality of chambers of a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

PROPOSED COUNT 11	CLAIM 63 OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) fixing at least one electrode to tissue of a	(a) fixing at least one electrode to the

PROPOSED COUNT 11	CLAIM 63 OF '750 APPLICATION
subject's heart;	epicardium of a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.

Attachment O

PROPOSED COUNT 12	CLAIM 12 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying a flow sensor which senses cardiac activity to the subject's body,
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

PROPOSED COUNT 12	CLAIM 13 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying a pressure sensor which senses cardiac activity to the subject's body,

PROPOSED COUNT 12	CLAIM 13 OF '324 PATENT
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

PROPOSED COUNT 12	CLAIM 14 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying an oxygen sensor which senses cardiac activity to the subject's body,
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

PROPOSED COUNT 12	CLAIM 15 OF '324 PATENT
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction;	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction;

PROPOSED COUNT 12	CLAIM 15 OF '324 PATENT
and	and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying a temperature sensor which senses cardiac activity to the subject's body,
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

Attachment P

PROPOSED COUNT 12	CLAIM 65 OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying a pressure sensor which senses cardiac activity to the subject's body,
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

PROPOSED COUNT 12	CLAIM 66 OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	A method for heart pacing with modification of cardiac contraction, comprising the steps of:
(a) applying one or more electrodes to a subject's heart;	(a) applying one or more electrodes to a subject's heart;
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and
(d) applying a sensor which senses cardiac activity to the subject's body,	(d) applying an oxygen sensor which senses cardiac activity to the subject's body,

PROPOSED COUNT 12	CLAIM 66 OF '750 APPLICATION
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.

Attachment Q

CLAIM 10	DISCLOSURE OF '750 APPLICATION
Apparatus for the combined drug/electric-stimulation treatment of a cardiac muscle, comprising:	*See* pages 3-4, para. 13. Electrical stimulation apparatus disclosed is not incompatible with combined drug/electric-stimulation treatment, e.g., widespread treatment with heparin.
means for creating an electric potential between at least two points located in the vicinity of the cardiac muscle;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
means for causing a non-excitatory DC electric current signal to flow between said at least two points;	Signal generator causing first phase of biphasic pulses. (pg. 7, para. 36)
means for controlling the start time, duration and magnitude of the electric current signal flowing between said at least two points; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
means for superimposing on the electric current signal one or more waveforms of given frequency and amplitude, thereby to generate a complex signal.	Signal generator causing second phase of biphasic pulses. (pg. 7, para. 36)

CLAIM 11	DISCLOSURE OF '750 APPLICATION
Apparatus according to claim 10, comprising:	--
means for creating an electric potential between at least a pair of electrodes in the vicinity of the cardiac muscle at least two root locations;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46) The administration of biphasic stimulation to the myocardium in order to enhance myocardial function. (pg. 5, para. 24).
means for causing a non-excitatory electric current signal to flow between said at least two root locations;	Signal generator causing first phase of biphasic pulses. (pg. 7, para. 36)
means for controlling the start time, duration and magnitude of the electric current signal flowing between said at least two root locations; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
means for superimposing on the electric current signal one or more waveforms of given frequency and amplitude, thereby to generate a complex signal.	Signal generator causing second phase of biphasic pulses. (pg. 7, para. 36)

CLAIM 12	DISCLOSURE OF '750 APPLICATION

CLAIM 12	DISCLOSURE OF '750 APPLICATION
Apparatus comprising	--
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of a muscle, comprising	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 causing a maximum membrane potential without activation is achieved in the first phase of stimulation. (pg. 11, para. 46; pg. 8, para. 36).
circuitry for controlling the start time and/or the duration of the electric potential generated between said at least two points which is synchronized to heart activity,	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required. (pg. 12, para. 48).
said circuitry not operating at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 13	DISCLOSURE OF '750 APPLICATION
Implantable apparatus comprising	The implantable pacer 810. (pg. 12, para. 49; pg. 8, para. 36).
circuitry for causing a non-excitatory electric current to flow between at least two points located in the vicinity of a muscle and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).
circuitry for controlling the start time and/or duration of the electric current, wherein	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required. (pg. 12, para. 48).
said circuitry for controlling does not operate at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 14	DISCLOSURE OF '750 APPLICATION
Apparatus for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising	Enhanced myocardial function is obtained through the biphasic pacing. (pg. 3, para. 13).
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and comprising	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 causing a maximum membrane potential without activation is achieved in the first phase of stimulation. (pg. 11, para. 46).
circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is	Circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be

CLAIM 14	DISCLOSURE OF '750 APPLICATION
synchronized to heart activity,	programmably stored and modified. (pg. 12, para. 48).
said circuitry not operating at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 15	DISCLOSURE OF '750 APPLICATION
Apparatus for reducing the contraction force of a muscle, comprising:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
means for creating an electric potential between at least two points located in the vicinity of the muscle;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).
means for causing a non-excitatory DC electric current to flow between said at least two point, if desired; and	Signal generator (*see* Pg. 7, paragraph 36) for causing "maximum membrane potential without activation is achieved in the first phase of stimulation". The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46; pg. 8, para. 36).
means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two points.	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 16	DISCLOSURE OF '750 APPLICATION
Apparatus according to claim 15, comprising:	
means for creating an electric potential between at least a pair of electrodes in the vicinity of the muscle at at least two root locations;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 causing a maximum membrane potential without activation is achieved in the first phase of stimulation. (pg. 11, para. 46).
means for causing a non-excitatory DC electric current to flow between said at least two root locations when desired; and	Signal generator (*see* pg. 7, para. 36) causing first phase of biphasic pulses.
means for controlling the start time, duration and magnitude of the non-excitatory electric potential and/or of the non-excitatory electric current flowing between said at least two root	Circuit for controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the Pacer's operation to suit the needs of a

CLAIM 16	DISCLOSURE OF '750 APPLICATION
locations.	particular patient. (pg. 12, para. 48).

CLAIM 17	DISCLOSURE OF '750 APPLICATION
A method for reducing the contraction force of a muscle, comprising	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 causing a maximum membrane potential without activation is achieved in the first phase of stimulation.(pg. 11, para. 46).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points.	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 18	DISCLOSURE OF '750 APPLICATION
A method for reducing the contraction force of a muscle, comprising	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	A maximum membrane potential without activation is achieved in the first phase of stimulation. The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points.	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 19	DISCLOSURE OF '750 APPLICATION
A method according to claim 17 or 18, wherein the muscle is a cardiac muscle.	Electrical stimulation is administered to the cardiac muscle. (pg. 13, para. 52).

CLAIM 20	DISCLOSURE OF '750 APPLICATION
A method according to claim 18, wherein the non-excitatory electric current is a DC current.	The present invention relates to the biphasic electrical stimulation of muscle tissue. (pg. 7,

CLAIM 20	DISCLOSURE OF '750 APPLICATION
	para. 34).

CLAIM 21	DISCLOSURE OF '750 APPLICATION
A method according to claim 20, further comprising generating a complex signal by superimposing on the DC signal one or more waveforms of given frequency and amplitude.	The method and apparatus of the present invention comprises a first and second stimulation phase, with each stimulation phase having a polarity, amplitude, shape and duration. (pg. 6, para. 25).

CLAIM 22	DISCLOSURE OF '750 APPLICATION
A method according to claim 18, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity.	The use of such sensors makes the pacemaker rate-responsive, because the pacemaker adjusts the rate of pacing in a manner that tracks the physiological needs of the patient. (pg. 13, para. 51).

CLAIM 23	DISCLOSURE OF '750 APPLICATION
A method according to claim 22, wherein the non-excitatory DC electric current flows not at every beat of the heart.	The use of such sensors makes the pacemaker rate-responsive, because the pacemaker adjusts the rate of pacing in a manner that tracks the physiological needs of the patient. (pg. 13, para. 51).

CLAIM 24	DISCLOSURE OF '750 APPLICATION
A method for performing heart treatment, comprising	*See* pgs. 3-4, para. 13.
reducing the contraction force of a treated area of the cardiac muscle, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and thereafter performing treatment thereon.	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 25	DISCLOSURE OF '750 APPLICATION
A method for performing heart treatment, comprising	*See* pgs. 3-4, para. 13.
reducing the contraction force of a treated area of the cardiac muscle, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the treated heart area and thereafter performing treatment thereon.	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 26	DISCLOSURE OF '750 APPLICATION
A method according to claim 24 or 25, wherein the heart surgery is a bypass operation.	Method disclosed is not incompatible with use in conjunction with heart surgery.

CLAIM 27	DISCLOSURE OF '750 APPLICATION
A method according to claim 24 or 25, wherein the heart surgery is a minimally invasive cardiac operation.	Method disclosed is not incompatible with use in conjunction with a minimally invasive cardiac operation.

CLAIM 28	DISCLOSURE OF '750 APPLICATION
A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to undergo atrophy and waste away. Through electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 15).
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	A maximum membrane potential without activation is achieved in the first phase of stimulation. The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).

CLAIM 28	DISCLOSURE OF '750 APPLICATION
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.	The use of biphasic electrical stimulation to the cardiac blood pool makes it possible to achieve enhanced cardiac contraction, without skeletal muscle contraction, cardiac muscle damage or adverse effects to the blood pool. (pg. 14, para. 53).

CLAIM 29	DISCLOSURE OF '750 APPLICATION
A method for promoting the healing of the cardiac muscle after myocardial infarct, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to undergo atrophy and waste away. Through Electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 15).
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	Stimulation threshold of biphasic stimulation administered via the blood pool (pg. 14, para. 53) biphasic electrical stimulation is administered to the cardiac blood pool, that is, the blood entering and surrounding the heart. This enables cardiac stimulation without the necessity of placing electrical leads in intimate contact with cardiac tissue. (pg. 14, para. 53).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the affected heart area.	*See* pgs. 3-4, para. 13.

CLAIM 30	DISCLOSURE OF '750 APPLICATION
A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising	The present invention results in increased propagation speed results in superior cardiac contraction leading to an improvement in blood flow. (pg. 3, para. 13).
causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	Through the practice of the present invention, one can enhance myocardial function through cardiac blood pool stimulation. (pg. 4, para. 13).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric current being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).

CLAIM 31	DISCLOSURE OF '750 APPLICATION
A method for selectively and reversibly reducing the oxygen consumption of an area of a muscle, comprising	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	the improved stimulation achieved through thT practice of the present invention allows for cardiac stimulation without the necessity of placing electrical leads in intimate contact with cardiac tissue and the practice of the present invention allows one to enhance myocardial function through cardiac blood pool stimulation. (pg. 4, para. 14).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of said non-excitatory electric potential,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric potential being of an intensity and polarity suitable to obtain the desired reduction in oxygen consumption at the affected heart area.	The use of biphasic electrical stimulation to the cardiac blood pool it is therefore possible to achieve enhanced cardiac contraction, without skeletal muscle contraction, cardiac muscle damage or adverse effects to the blood pool.

CLAIM 31	DISCLOSURE OF '750 APPLICATION
	(pg. 14, para. 53).

CLAIM 32	DISCLOSURE OF '750 APPLICATION
A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising	A patient suffering from a conduction disorder can be helped by an artificial pacemaker. (pg. 2, para. 7).
reducing the contraction force of the heart muscle by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	Through the practice of the present invention, one can enhance myocardial function through cardiac blood pool stimulation. (pg. 4, para. 13).
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric potential being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.	The use of biphasic electrical stimulation to the cardiac blood pool it is therefore possible to achieve enhanced cardiac contraction, without skeletal muscle contraction, cardiac muscle damage or adverse effects to the blood pool. (pg. 14, para. 54).

CLAIM 33	DISCLOSURE OF '750 APPLICATION
A method for treating congenital or acquired hypertrophic cardiomyopathy, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to undergo atrophy and waste away. A muscle that cannot be exercised may decrease to half of its usual size in a few months. Through electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 5).
reducing the contraction force of the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 causing a maximum membrane potential without activation is achieved in the first phase of stimulation. (pg. 11, para. 46; pg. 8, para. 36).

CLAIM 33	DISCLOSURE OF '750 APPLICATION
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric current flowing between said at least two points,	Controlling the operation of the pacemaker, to be programmably stored and modified, as required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).
said electric current being of an intensity and polarity suitable to obtain the desired reduction in muscle contraction.	The use of biphasic electrical stimulation to the cardiac blood pool it is therefore possible to achieve enhanced cardiac contraction, without skeletal muscle contraction, cardiac muscle damage or adverse effects to the blood pool. (pg. 14, para. 54).

CLAIM 34	DISCLOSURE OF '750 APPLICATION
A method for performing cardiac treatment, comprising	*See* pgs. 3-4, para. 13.
reducing the contraction force of the area of the cardiac muscle to be treated, by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
controlling one or more of the parameters consisting of start time, duration, magnitude and polarity of the non-excitatory electric potential created between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be treated, and	Signal generator control circuitry. (pgs. 11-12, para. 47)
thereafter performing the treatment thereon.	Disclosed method is not incompatible with further treatment being performed.

CLAIM 35	DISCLOSURE OF '750 APPLICATION
A method for performing cardiac treatment, comprising	*See* pgs. 3-4, para. 13.
reducing the contraction force of the area of the cardiac muscle to be treated, by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
controlling one or more of the parameters consisting of start time, duration, magnitude	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 35	DISCLOSURE OF '750 APPLICATION
and polarity of the non-excitatory electric current flowing between said at least two points, thereby to obtain the desired reduction in muscle contraction at the heart area to be treated, and	
thereafter performing the treatment thereon.	Disclosed method is not incompatible with further treatment being performed.

CLAIM 36	DISCLOSURE OF '750 APPLICATION
A method according to any one of claims 25, 29, 30, 33 or 35, wherein the non-excitatory electric current is a DC current.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval.

CLAIM 37	DISCLOSURE OF '750 APPLICATION
A method according to claim 36, further comprising generating a complex signal by superimposing on the DC signal one or more waveforms of given frequency and amplitude.	The method of the present invention comprises a first and second stimulation phase, with each stimulation phase having a polarity, amplitude, shape and duration. (pg. 6, para. 25).

CLAIM 38	DISCLOSURE OF '750 APPLICATION
A method according to any one of claims 25, 29, 30, 33 or 35, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval, which repeats in synchrony with heart activity.

CLAIM 39	DISCLOSURE OF '750 APPLICATION
A method according to claim 38, wherein the non-excitatory DC electric current flows not at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 40	DISCLOSURE OF '750 APPLICATION
A method according to any one of claims 25 and 28 to 33, wherein the cardiac muscle contractility is increased at locations other than the treated location.	*See* pgs. 4-5, para. 15.

CLAIM 41	DISCLOSURE OF '750 APPLICATION
A method for the interim treatment of a heart in need of reducing oxygen consumption,	Enhanced myocardial function is obtained through the biphasic pacing of the present

CLAIM 41	DISCLOSURE OF '750 APPLICATION
comprising	invention. (pg. 3, para. 13).
reducing the contraction force of the heart muscle by creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area,	The use of biphasic electrical stimulation to the cardiac blood pool it is therefore possible to achieve enhanced cardiac contraction, without skeletal muscle contraction, cardiac muscle damage or adverse effects to the blood pool. (pg. 14, para. 53).
thereby reducing the oxygen consumption of the heart.	*See* pgs. 5-6, para. 24.

CLAIM 42	DISCLOSURE OF '750 APPLICATION
A method for the interim treatment of heart in need of reducing oxygen consumption, comprising	*See* pgs. 5-6, para. 24.
reducing the contraction force of a the heart muscle by causing a non-excitatory electric current to flow between at least two points located in the vicinity of the muscle, of an intensity and polarity suitable to obtain the desired reduction in muscle contraction at the treated heart area,	Causing a maximum membrane potential without activation is achieved in the first phase of stimulation through a pacemaker 810 coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).
thereby reducing the oxygen consumption of the heart.	*See* pgs. 5-6, para. 24.

CLAIM 43	DISCLOSURE OF '750 APPLICATION
A method according to claim 42, wherein the non-excitatory electric current is a DC current.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval.

CLAIM 44	DISCLOSURE OF '750 APPLICATION
A method according to claim 43, further comprising generating a complex signal by superimposing on the DC signal one or more waveforms of given frequency and amplitude.	The method of the present invention comprises a first and second stimulation phase, with each stimulation phase having a polarity, amplitude, shape and duration. (pg. 6, para. 25).

CLAIM 45	DISCLOSURE OF '750 APPLICATION
A method according to claim 42, wherein the flow of the non-excitatory DC electric current is synchronized to heart activity.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval, which repeats in synchrony with heart activity.

CLAIM 46	DISCLOSURE OF '750 APPLICATION
A method according to claim 45, wherein the non-excitatory DC electric current flows not at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 47	DISCLOSURE OF '750 APPLICATION
A method for reducing the contraction force of a muscle, comprising:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
providing means for creating an electric potential between at least two points located in the vicinity of the muscle;	A maximum membrane potential without activation is achieved in the first phase of stimulation. The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46; pg. 8, para. 36).
providing means for causing a non-excitatory DC electric current to flow between said at least two point;	Administration of biphasic stimulation to the muscle tissue. (pg. 5, para. 24).
providing means for switching the current polarity between said at least two points; and	Causing first phase of biphasic pulses. (pg. 7, para. 36).
providing means for controlling the start time, duration and magnitude of the electric current flowing between said at least two points.	Circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required. (pg. 12, para. 48).

CLAIM 48	DISCLOSURE OF '750 APPLICATION
A method according to claim 47, comprising:	
providing an electric potential between at least a pair of electrodes in the vicinity of the muscle at at least two root locations;	A maximum membrane potential without activation is achieved in the first phase of stimulation. The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816. (pg. 11, para. 46).
causing a non-excitatory DC electric current to flow between said at least two contacting locations;	Signal generator control circuitry. (pgs. 11-12, para. 47)
providing means for switching the current polarity between said root locations; and	The present invention comprises a first and second stimulation phase, with each stimulation phase having a polarity, amplitude, shape and duration. (pg. 6, para. 25).
controlling the start time, duration and magnitude of the electric current flowing	Controlling the operation of the pacemaker, to be programmably stored and modified, as

CLAIM 48	DISCLOSURE OF '750 APPLICATION
between said at least two root locations, so as to obtain the desired reduction in muscle contraction.	required, in order to customize the pacer's operation to suit the needs of a particular patient. (pg. 11, para. 46).

CLAIM 49	DISCLOSURE OF '750 APPLICATION
A method according to claim 47 or 48, further comprising generating a complex signal by superimposing on the DC signal one or more waveforms of given frequency and amplitude.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval.

CLAIM 50	DISCLOSURE OF '750 APPLICATION
A method according to claim 47 or 48, wherein the means for causing a non-excitatory DC electric current to flow, are synchronized to heart activity.	The first phase of the disclosed biphasic pulse is constant DC over a brief interval, which repeats in synchrony with heart activity.

CLAIM 51	DISCLOSURE OF '750 APPLICATION
A method according to claim 50, wherein the means for causing a non-excitatory DC electric current to flow operate not at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 52	DISCLOSURE OF '750 APPLICATION
Apparatus for performing heart surgery, comprising	Implant of electrodes is surgery.
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the heart muscle and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
circuitry for controlling the start time and/or duration of electric current flowing between said at least two points which is synchronized to heart activity,	Signal generator control circuitry. (pgs. 11-12, para. 47)
wherein said circuitry for controlling does not operate at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 53	DISCLOSURE OF '750 APPLICATION
Apparatus for promoting the healing of the hibernated area of the cardiac muscle after myocardial infarct, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to

CLAIM 53	DISCLOSURE OF '750 APPLICATION
	undergo atrophy and waste away. Through electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 15).
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising	Signal generator control circuitry. (pgs. 11-12, para. 47)
circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required. (pg. 12, para. 48)
said circuitry not operating at every beat of the heart.	To customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 54	DISCLOSURE OF '750 APPLICATION
Apparatus for promoting the healing of an ischmeic area of the cardiac muscle, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to undergo atrophy and waste away. Through electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 15).
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising	Signal generator control circuitry. (pgs. 11-12, para. 47)
circuitry for controlling the start and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified, as required. (pg.12, para. 48).
said circuit not operating at every beat of the heart.	To customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 55	DISCLOSURE OF '750 APPLICATION
Apparatus for treating congenital or acquired hypertrophic cardiomyopathy, comprising	Where nerve fibers have been damaged due to trauma or disease, muscle fibers in the regions supplied by the damaged nerve fiber tend to undergo atrophy and waste away. Through electrical stimulation one may maintain muscle tone, such that upon healing or regeneration of the nerve fiber, viable muscle tissue remains. Enhanced muscle contraction is obtained through the biphasic stimulation of the present invention. (pg. 4, para. 15).
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising	Signal generator control circuitry. (pgs. 11-12, para. 47)
circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	The memory circuit 840 allows certain control parameters, used by the control system 826 in controlling the operation of the pacemaker, to be programmably stored and modified. pg. 12, para. 48).
said current not operating at every beat of the heart.	To customize the pacer's operation to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 56	DISCLOSURE OF '750 APPLICATION
Apparatus for aiding in performing cardiac ablation, comprising	The disclosed device is suitable for use in cardiac ablation (an intended use).
circuitry for creating a non-excitatory electric potential between at least two points located in the vicinity of the muscle, comprising	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
circuitry for controlling the start time and/or duration of the electric current flowing between said at least two points which is synchronized to heart activity,	Signal generator control circuitry. (pgs. 11-12, para. 47)
said circuitry not operating at every beat of the heart.	The pacer operates to suit the needs of a particular patient. (pg. 12, para. 48).

CLAIM 57	DISCLOSURE OF '750 APPLICATION
Apparatus according to any one of claims 14, 52, and 53-56, wherein	--
the non-excitatory electric current is a DC current, further comprising	The first phase of the disclosed biphasic pulse is constant DC over a brief interval.
signal generation circuitry for superimposing	The pulses as disclosed are biphasic. (pgs. 3-4,

CLAIM 57	DISCLOSURE OF '750 APPLICATION
on the DC signal one or more waveforms of given frequency and amplitude, thereby to generate a complex signal.	para. 13)

CLAIM 58	DISCLOSURE OF '750 APPLICATION
Apparatus for heart pacing with cardiac output modification, comprising:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
at least one pressure sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	Piezoelectric activity pressure sensor used for feedback control. (pg. 13, para. 51).

CLAIM 59	DISCLOSURE OF '750 APPLICATION
Apparatus for heart pacing with cardiac output modification, comprising:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
at least one sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the	Various sensors disclosed as being used for feedback control. (pg. 13, para. 51).

CLAIM 59	DISCLOSURE OF '750 APPLICATION
pulses responsive thereto.	

CLAIM 60	DISCLOSURE OF '750 APPLICATION
Apparatus for heart pacing with cardiac output modification, comprising:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
one or more electrodes adapted to apply electrical signals to cardiac muscle segments;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
signal generation circuitry adapted to apply an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart and a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac output; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
at least one oxygen sensor which senses cardiac activity, wherein the sensor is coupled to the signal generation circuitry, which generates the pulses responsive thereto.	Blood oxygenation sensor disclosed as being used for feedback control. (pg. 13, para. 51).

CLAIM 61	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) implanting a pacing electrode in a first chamber of a subject's heart; (b) implanting a non-excitatory stimulation electrode in another chamber of the subject's heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(c) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
(d) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 62	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) implanting at least one non-excitatory stimulation electrode in each of a plurality of chambers of a subject's heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 63	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) fixing at least one electrode to the epicardium of a subject's heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(b) conveying an excitatory electrical pulse to at least one of the electrodes to pace the heart; and	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the electrodes to modify the cardiac contraction.	Signal generator control circuitry. (pgs. 11-12, para. 47)

CLAIM 64	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) applying one or more electrodes to a subject's heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)

CLAIM 64	DISCLOSURE OF '750 APPLICATION
pace the heart;	
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
(d) applying a sensor which senses cardiac activity to the subject's body,	Various sensors disclosed. (pg. 13, para. 51).
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	The various sensors are disclosed as being used for feedback control. (pg. 13, para. 51).

CLAIM 65	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) applying one or more electrodes to a subject's heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
(d) applying a pressure sensor which senses cardiac activity to the subject's body,	Piezoelectric activity pressure sensor. (pg. 13, para. 51).
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	The piezoelectric activity pressure sensor used for feedback control. (pg. 13, para. 51).

CLAIM 66	DISCLOSURE OF '750 APPLICATION
A method for heart pacing with modification of cardiac contraction, comprising the steps of:	Enhanced myocardial function is obtained through the biphasic pacing of the present invention. (pg. 3, para. 13).
(a) applying one or more electrodes to a	The pacemaker 810 is coupled to a heart 812

CLAIM 66	DISCLOSURE OF '750 APPLICATION
subject's heart;	by way of leads 814 and 816 (pg. 11, para. 46) Refer to Fig. 8 for placement disclosure.
(b) conveying an excitatory electrical pulse to at least one of the one or more electrodes to pace the heart;	The pacemaker 810 is coupled to a heart 812 by way of leads 814 and 816 (pg. 11, para. 46)
(c) conveying a non-excitatory stimulation pulse of a magnitude and at a timing at which it is unable to generate a propagating action potential to at least one of the one or more electrodes to modify the cardiac contraction; and	Signal generator control circuitry. (pgs. 11-12, para. 47)
(d) applying an oxygen sensor which senses cardiac activity to the subject's body,	Blood oxygenation sensor. (pg. 13, para. 51).
wherein conveying the non-excitatory stimulation pulse comprises generating a pulse responsive to the activity.	The blood oxygenation sensor is disclosed as being used for feedback control. (pg. 13, para. 51).

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In re Application of

Morton M. MOWER

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Examiner:

For: AUGMENTATION OF ELECTRICAL CONDUCTION AND CONTRACTILITY BY BIPHASIC CARDIAC PACING ADMINISTERED VIA THE BLOOD POOL

TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed please find the following:

1. Second Preliminary Amendment;
2. Request for Interference Under 37 C.F.R. § 1.607(a) (including Attachments A through Q); and
3. Check for $468.00 ($387.00 fee for 9 additional excess independent claims and $81.00 fee for 9 additional excess total claims).

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to Deposit Account No. 18-1579. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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Date: October 6, 2003